REMARKS

Claims 1-16, 18-27, 29-44 and 46 are pending. By the present communication claims 1-5, 38-43 and 46 have been cancelled without prejudice to pursuing the subject matter of these claims in one or more applications claiming the benefit of priority to the above-identified application. Claims 6, 13-15 and 44 have been amended. Claims 6 and 13-15 have been amended to depend from claim 16. Claim 44 has been amended as an independent claim. Accordingly, the amendments do not introduce new matter. Furthermore, Applicant respectfully submits that entry of the amendments after final is proper because the amendments cancel claims, place the claims into condition for allowance or in better form for consideration on appeal, and do not raise new issues for consideration in accordance with 37 CFR 1.116 and MPEP 714.12 and 714.13. Therefore, entry of the amendments is respectfully requested. A marked-up copy of the claims showing the amendments is attached hereto as Appendix A.

Applicant respectfully submits that, in contrast to item 4 in the Office Action Summary and page 2, paragraph 1 of the Office Action mailed July 17, 2001, claim 18 is pending in the above-identified application. In this regard, claim 18 was correctly identified as pending in the Office Action mailed November 21, 2000, and claim 18 has not been cancelled by the Applicant.

Further in regard to the Office Action summary and page 2, paragraph 1 of the Office Action, Applicant submits that

claims 16, 18-27, 29-37 and 44 have been incorrectly identified as being rejected because no rejections have been set forth in the Office Action in connection with claims 16, 18-27, 29-37 and 44.

> In taking up an amended application for action the Examiner should note in every letter all the requirements outstanding against the application. Every point in the prior action of an examiner which is still applicable must be repeated or referred to, to prevent the implied waiver of the *requirement*.

MPEP 707.07(e), emphasis in original. Furthermore,

> [w]here a claim is refused for any reason relating to the merits thereof it should be "rejected" and the ground of rejection fully and clearly stated, and the word "reject" must be used. The Examiner should designate the *statutory basis* for any ground of rejection by express reference to a section of 35 U.S.C. in the opening sentence of each ground of rejection.

MPEP 707.07(d), first paragraph, emphasis in original. Absent any stated grounds for rejection or designation of a statutory basis for rejection, it is Applicant's understanding that claims 16, 18-27, 29-37 and 44 are allowed.

Claims 1-15, 38-43 and 46-49, stand rejected under 35 U.S.C. § 112, first paragraph, as allegedly lacking enablement.

Applicant respectfully traverses the rejection and maintains, for the reasons of record, that the specification is sufficiently enabling for claims 1-15, 38-43 and 46-49. Nevertheless, in order to further prosecution of this application, Applicant has cancelled claims 1-5, 38-43 and 46. Claims 47-49 were previously cancelled as indicated on page 2, paragraph 1 of the Office Action. Claims 6-15, as amended, depend from claim 16, which has not been rejected under 35 U.S.C. § 112, first paragraph. Therefore, it is respectfully submitted that the rejection is moot.

Claims 1, 3-4, 6-11, 13-15, 42-43 and 46 stand rejected under 35 U.S.C. § 102(b), as allegedly anticipated by Zapata et al. Applicant respectfully traverses the rejection and maintains, for the reasons of record, that claims 1, 3-4, 6-11, 13-15, 42-43 and 46 are not anticipated by Zapata et al. Nevertheless, in order to further prosecution of this application, Applicant has cancelled claims 1-5, 38-43 and 46. Claims 6-15, as amended, depend from claim 16, which has not been rejected under 35 U.S.C. § 102(b). Therefore, it is respectfully submitted that the rejection is moot.

Claims 1, 3-4, 6-15, 38-43 and 46 stand rejected under 35 U.S.C. § 103(a), as allegedly obvious over Zapata et al. in view of Sano et al. Applicant respectfully traverses the rejection and maintains, for the reasons of record, that claims 1, 3-4, 6-15, 38-43 and 46 are not obvious over Zapata et al. in view of Sano et al. Nevertheless, in order to further prosecution of this application, Applicant has cancelled claims

1-5, 38-43 and 46. Claims 6-15, as amended, depend from claim 16, which has not been rejected under 35 U.S.C. § 103(a). Therefore, it is respectfully submitted that the rejection is moot.

CONCLUSION

In light of the Amendments and Remarks herein, Applicant submits that the claims are now in condition for allowance and respectfully request a notice to this effect. Should the Examiner have any questions, she is invited to call the undersigned agent or Cathryn Campbell.

Respectfully submitted,

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APPENDIX A

A marked up version of the claims showing amendments is provided below. For the convenience of the Examiner, the full set of claims following entry of the amendments is provided and the claims are grouped together according to subject matter rather than in numerical order.

16. A method for prognosis of disease-free or overall survival of an individual having a cancer tumor, comprising determining the level of BAG gene expression in a sample of said tumor or a body fluid, wherein a high level of expression correlates positively with disease-free or overall survival, wherein said cancer is breast cancer.

18. The method of claim 16, wherein said level of BAG expression is determined by measuring the level of mRNA encoded by said BAG gene.

19. The method of claim 16, wherein said level of BAG expression is determined by measuring BAG protein levels.

20. The method of claim 16, wherein said level of BAG expression is determined by measuring the level of BAG protein that is detectable in samples selected from the group consisting of breast tumor tissue, blood, serum, and plasma.

21. The method of claim 16, further comprising determining if said level of BAG expression represents an overproduction that is above a reference level of BAG expression.

22. The method of claim 21, wherein said reference level of BAG expression is determined by a histogram analysis.

23. The method of claim 21, wherein said reference level of BAG expression is determined relative to a level of BAG expression produced by *in vitro* cultured cells which produce BAG.

24. The method of claim 21, wherein said reference level of BAG expression is determined relative to a level of BAG expression in non-cancerous cells.

6. (Amended) The method of claim 16 [1], wherein said expression level of the BAG gene is determined by measuring the amount of the BAG mRNA transcript or BAG protein.

7. The method of claim 6, wherein said measuring the amount of BAG protein is with an agent that binds BAG protein.

8. The method of claim 7, wherein said agent is an antibody specific for the BAG protein.

9. The method of claim 7, wherein said BAG protein is BAG-1.

10. The method of claim 7, wherein said BAG protein is BAG-1N.

11. The method of claim 6, wherein said expression level of the BAG gene is determined by measuring the amount of BAG protein product using an immunoassay.

12. The method of claim 11, wherein said immunoassay is an immuno-polymerase chain reaction (immuno-PCR) assay.

13. (Amended) The method of claim 16 [1], wherein said level of expression of the BAG gene is determined prior to lymph node involvement of said cancer.

14. (Amended) The method of claim 16 [1], wherein said level of expression of the BAG gene is determined after lymph node involvement of said cancer.

15. (Amended) The method of claim 16 [1], wherein said level of expression of the BAG gene is determined during Stage I or Stage II of said cancer.

25. A method for predicting the risk of tumor recurrence or spread in an individual having a cancer tumor, comprising determining whether BAG protein is produced in a sample of said tumor or body fluid from said individual, such a production correlating negatively with a likelihood of tumor recurrence or spread, wherein said cancer is breast cancer.

26. The method of claim 25, further comprising:

(a) determining an overproduction level for BAG protein, said level being in excess of a minimum amount statistically determined to be indicative of decreased likelihood of tumor recurrence or spread;

(b) determining the level of BAG expression in said tumor sample; and

(c) predicting said risk of tumor recurrence or spread wherein an overproduction level of BAG protein in the tumor sample is negatively associated with the likelihood of tumor recurrence or spread.

27. A method for screening a cancer patient to determine the risk of tumor metastasis, said method comprising:

(a) determining the level of amplification or expression of the BAG gene in a cancerous tissue sample or a body fluid sample from said patient; and

(b) classifying a patient having high levels of amplification or expression of the BAG gene, relative to a reference level, as being less likely to suffer tumor metastasis or having a increased chance of survival,

wherein said cancer is breast cancer.

29. The method of claim 27, wherein BAG amplification is measured with a probe specific for the BAG gene.

30. The method of claim 27, wherein gene expression is determined by measuring the amount of BAG mRNA transcription.

31. The method of claim 27, wherein gene expression is determined by measuring the amount of BAG protein.

32. The method of claim 31, wherein the amount of BAG protein is measured using an immunoassay.

33. The method of claim 32, wherein said immunoassay is an immuno-polymerase chain reaction assay.

34. A method for determining the proper course of treatment for a patient suffering from cancer, said method comprising:

(a) determining the level of BAG gene expression in a cancerous tissue sample or body fluid from said patient;

(b) identifying a first group of patients having low levels of BAG gene expression, which first group of patients may require treatment proper for patients having a lesser chance of survival or decreased time to tumor recurrence or spread; and

(c) identifying a second group of patients having high levels of BAG gene expression, which second group of patients may require treatment proper for patients having a greater chance of survival and being less likely to suffer tumor recurrence or spread,

wherein said cancer is breast cancer.

35. The method of claim 34, wherein said level of BAG gene expression is determined by measuring the amount of BAG mRNA transcript or BAG protein.

36. The method of claim 34, wherein said level of BAG gene expression is determined prior to lymph node involvement.

37. The method of claim 34, wherein said level of expression of the BAG gene is determined after lymph node involvement of said cancer.

44. (Twice amended) A method for determining a prognosis in a patient suffering from cancer, said method comprising:

(a) determining the level of expression of BAG in cancerous tissues of a patient; and

(b) classifying said patient as belonging either to a first group of patients having high levels of expression of BAG, or a second group of patients having low levels of expression of BAG [The method of claim 43],

wherein said first group has a lower likelihood of tumor recurrence or spread than said second group, and wherein said cancer is breast cancer.